

## ***Interactive comment on “Seasonal variation of ozone deposition to a tropical rain forest in southwest Amazonia” by U. Rummel et al.***

**U. Rummel et al.**

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We like to thank reviewer #2 for his positive evaluations and helpful comments. Our responses to specific comments are listed below:

RC #2: " Please address the interactive comment submitted by T. Karl."

AC: Please see the AC on the IC of T. Karl

RC #2: " Figure 6 is somewhat superfluous. It is only briefly discussed and does not necessarily help the reader to interpret either the results or the conclusion."

AC: Since all other Figures in the manuscript display average values or average diurnal courses, Figure 6 gives additional information about the temporal evolution of the O<sub>3</sub> mixing ratio and the SHD values during the dry season experiment. We consider this additional information to be a helpful orientation for the reader when intra-seasonal

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variations of  $O_3$ -deposition and surface resistances are discussed in Section 5.3.

RC #2: "...the choice of  $u^*$ (critical) here appears somewhat arbitrary. A brief justification is needed if no reference is available. Also how much data is rejected under this criteria?"

AC: The use of  $u^*$ (critical) considers methodological failure of the eddy covariance approach during calm conditions without fully developed turbulence. Below the chosen limit of the friction velocity (0.01 m/s) the corresponding measured momentum flux was systematically positive. On the other hand this threshold is low enough to avoid a strong nocturnal selection-related bias towards windy conditions. The resulting daytime (nighttime) rejection rates under this criterion are 11% (41%) and 6% (30%) related to the wet and the dry season experimental periods, respectively. We added the following sentence in Section 3.1 (p. 7408, l.10): "This threshold was found to be high enough to reject most cases affected by non-turbulent conditions and low enough to avoid a strong selection-related bias towards windy conditions during nighttime."

RC #2: "...Although interesting, the estimate of the regional forest-transformation effect on ozone deposition is very speculative(Section 5.4, paragraph 6, ... a similary rough treatment of the uncertainty is required to justify if they have any relevance and/or are at all tied to reality. Please add this or eliminate the speculative calculation."

AC: We removed the paragraph.

RC #2: " Section 4.2, paragraph 3 (page 7415, line 1) should read "During the wet season experiment""

AC: now changed to: "During the wet season experiment..."

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Interactive comment on Atmos. Chem. Phys. Discuss., 7, 7399, 2007.